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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/697,317	10/31/2003	Tatsuhiko Ema	04329.2473-02	8512
22852	7590	07/07/2004	EXAMINER	
FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP 1300 I STREET, NW WASHINGTON, DC 20005			LAZOR, MICHELLE A	
			ART UNIT	PAPER NUMBER
			1734	

DATE MAILED: 07/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/697,317

Applicant(s)

EMA ET AL.

Examiner

Michelle A Lazor

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1734

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 17-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☒ Certified copies of the priority documents have been received in Application No. 09/735,553.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 11/25/02.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Claim Objections*

1. Claim 17 is objected to because of the following informalities: The second line of the claim is understood to read: a dropping nozzle for dropping a liquid onto a substrate to be processed. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Courtenay (U.S. Patent No. 5902399) in view of Takekuma et al. (U.S. Patent No. 5580607).

Courtenay discloses a deposition apparatus comprising a movable dropping nozzle (40) and a driving section (Figure 3; column 4, lines 24 – 42), but does not disclose a temperature controller. However, Takekuma et al. disclose the substrate being mounted on a temperature controller, wherein the temperature at the dropping starting point of the substrate may be set higher than a temperature at the dropping end point of the substrate (Figures 3 and 4; column 5, lines 1 – 10). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus of Courtenay so that a temperature distribution (such as having a dropping starting point of the substrate at the periphery, to a dropping ending point at

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the center of the substrate) may be obtained to have an even coating distribution on the wafer (column 3, lines 30 – 54).

4. Claims 18 – 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Courtenay and Takekuma et al. as applied in Claim 17 above, in view of Ito et al. (U.S. Patent No. 6072162).

Regarding Claim 18, Courtenay and Takekuma et al. disclose all of the limitations of Claim 17, including the temperature controller to include a heat absorbing section and a heat generating section constituted by a plurality of plates (Figure 4; column 5, lines 1 – 33), but does not disclose a thermal diffusion plate provided on the heat absorbing and heat generating sections. However, Ito et al. teach using a thermal diffusion plate (11) on the heater (Figure 2; column 6, lines 7 – 29). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use a thermal diffusion plate provided on the heater to improve the efficiency and distribution of the heat provided to the substrate.

Regarding Claims 19 and 20, Takekuma et al. disclose independently controlling temperatures of a plurality of areas of an outer region of the substrate, as well as controlling a temperature of a central region of the substrate (column 5, lines 1 – 33), while Ito et al. teach using a thermal diffusion plate as discussed above in Claim 18. Ito et al. also teach using a gap adjustment table, which is provided in the thermal diffusion plate forming a gap by the use of pins (21a – c) between the thermal diffusion plate and the substrate (column 6, lines 30 – 33). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use a gap adjustment table provided in the thermal diffusion plate between the thermal diffusion plate and the substrate for vertical movement for moving substrate upward or

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downward to control the amount of heat the substrate is exposed to (column 6, lines 30 – 33 and column 7, lines 15 – 28).

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michelle A Lazor whose telephone number is 571-272-1232.

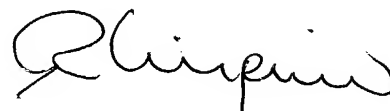
The examiner can normally be reached on Mon - Wed 6:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



MAL  
6/23/04



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